

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 4 has been amended as follows:

Listing of Claims:

1. (Previously presented): A micro-bubble generating system, comprising a container main unit having an interior space closed by a bottom at one end, a pressurized liquid inlet communicating tangentially with said interior space, a gas introducing hole opening in the closed bottom of the space and being operative to introduce gas into said space to generate a swirling gas that is exposed to contact with swirling pressurized liquid introduced through said pressurized liquid inlet, and a swirling gas-liquid mixture outlet opening at the other end of said interior space.

2. (Previously Presented): A micro-bubble generating system, comprising a container main unit having an interior space of frusto-conical shape and being closed at one end, a pressurized liquid inlet communicating tangentially with said interior space, a gas introducing hole opening at one end of said frusto-conical space to generate a swirling gas that is exposed to contact with swirling pressurized liquid introduced through said liquid inlet, and a swirling gas-liquid mixture outlet opened at the other end of said interior space.

3. (Previously presented): A micro-bubble generating system according to one of claims 1 or 2, wherein a plurality of pressurized liquid inlets open in tangential direction on a part of a circumferential surface of an inner wall of the space are spaced about the circumference of the inner wall of the interior space.

4. (Currently amended): A micro-bubble generating system according to one of claims 1 or 2, wherein ~~the~~ a pressurized liquid introducing hole is opened on a part of the circumferential surface of inner wall near ~~the~~ a gas-mixture outlet from said interior space.

5. (Previously presented): A micro-bubble generating system according to one of claims 1 or 2, wherein the pressurized liquid inlet is opened on a part of circumferential surface of inner wall near a middle portion of said interior space.

6. (Withdrawn): A micro-bubble generating system according to one of claims 1 or 2, wherein a baffle plate is arranged closely spaced from the swirling gas-liquid mixture outlet from the interior space.

7. (Withdrawn): A micro-bubble generating system according to one of claims 1 or 2, wherein a partition plate for closing the outlet is attached, leaving only a partial opening defining the swirling gas-liquid mixture outlet from the interior space.

8. (Previously presented): A method for micro-bubble generation, using a micro-bubble generating system, which comprises a container main unit having an interior space with a bottom, a pressurized liquid inlet opened in a tangential direction on a part of a circumferential surface of an inner wall of the space, a gas introducing hole opened at the bottom of the interior space, and a swirling gas-liquid mixture outlet opened at a mixture discharge end of the interior space, whereby said method comprises:

a first step of forming a swirling gas cavity for swirling and guiding self-sucked gas while extending and narrowing down the gas flow in the interior space; and

a second step of generating micro-bubbles by forcibly cutting off and smashing the swirling gas cavity by contact with swirling pressurized liquid due to a difference of swirling velocity between the gas and liquid portions in the swirling gas cavity.

9. (Previously presented): A method for micro-bubble generation, using a micro-bubble generating system, which comprises a container main unit having an interior space with a bottom, a pressurized liquid inlet opened in a tangential direction on a part of a circumferential surface of an inner wall of the space, a gas introducing hole opened at the bottom of the interior space, and a swirling gas-liquid mixture outlet opened at a mixture discharge end of the interior space, whereby said method comprises:

a first step of forming a swirling gas cavity for swirling and guiding self-sucked gas while extending and narrowing down the gas flow in the interior space; and

a second step of generating micro-bubbles by forcibly cutting off and smashing the swirling gas cavity by contact with swirling pressurized liquid due to a difference of swirling velocity between the portions in the swirling gas cavity;

a third step of continuously cutting off and smashing the swirling gas cavity in said interior space due to relative increase of the difference in rotating velocity between the rotating cut-off portion and smashing portion in the second step, the liquid passing through the rotating cut-off portion is rapidly expanded in conical shape while rotating (where the fluid not containing micro-bubbles is filled in the rotating fluid expanding in conical shape) the rotating fluid expanding in conical shape is stably formed, and expanding angle of conical shape is large (about 90°), and rotating difference of rotating velocity is relatively increased between the rotating cut-off portion and the smashing portion in the second step.